

CLAIMS

What is claimed is:

1. An image information apparatus comprising:

an image-information-apparatus main unit including

a first central processing unit, and

a connection interface for connecting with a module unit that has a second central processing unit for controlling the first central processing unit; wherein:

the first central processing unit and the second central processing unit each have a plurality of hierarchical control strata, and

the second central processing unit included in the module unit is configured to transmit, between each of the hierarchical control strata of the first central processing unit and respectively corresponding hierarchical control strata of the second central processing unit, control information related to each of respectively corresponding hierarchical control strata, so as to control the image-information-apparatus main unit.

2. An image information apparatus as recited in claim 1, wherein:

the image-information-apparatus main unit and the module unit are connected with each other through the connection interface; and

the apparatus is configured to store, into data storage provided outside the apparatus and connected to a network to which the module unit is connected, image data outputted from the image-information-apparatus main unit or the module unit.

3. An image information apparatus as recited in claim 2, wherein:

the plurality of hierarchical control strata of the image-information-apparatus main unit and the plurality of hierarchical control strata of the module unit are structured to include a software program for each respective hierarchical control stratum; and

data is transmitted and received between each software program that

structures the plurality of hierarchical control strata of the image-information-apparatus main unit and each software program that structures the plurality of hierarchical control strata of the module unit.

4. An image information apparatus as recited in claim 3, wherein:

each software program included respectively in the image-information-apparatus main unit and in the module unit includes a respective operating system; and

data is transmitted and received between each of the respective operating systems.

5. An image information apparatus as recited in claim 3, wherein:

each software program included respectively in the image-information-apparatus main unit and in the module unit includes a respective middleware item; and

data is transmitted and received between each of the respective middleware items of the main and module units.

6. An image information apparatus as recited in claim 3, wherein:

each software program included respectively in the image-information-apparatus main unit and in the module unit includes a respective application; and

data is transmitted and received between each of the respective applications.

7. An image information apparatus as recited in claim 3, wherein:

each software program included respectively in the image-information-apparatus main unit and in the module unit includes a respective inter-process communications communicator; and

data is transmitted and received between each of the respective inter-process communications communicators.

8. An image information apparatus as recited in claim 2, wherein the module unit, in addition to having the second central processing unit, includes an operating system for controlling the second central processing unit, and a hardware engine running on the operating system.

9. An image information apparatus as recited in claim 2, wherein the image-information-apparatus main unit and the module unit store, in respective memories provided in the main unit and the module unit, administration information related to respective hardware or hardware engines that the main unit and the module unit each have.

10. An image information apparatus as recited in claim 9, wherein the module unit:

reads out, from the memory provided in the image information apparatus, first administration information related to the hardware or the hardware engine that the image information apparatus, connected to the module unit, has, and

structures third administration information based on the first administration information and on second administration information stored in the memory provided in the module unit and related to the hardware or the hardware engine that the module unit has.

11. An image information apparatus as recited in claim 10, wherein the first administration information includes a flag related to the hardware or the hardware engine that the image information apparatus has.

12. An image information apparatus as recited in claim 10, wherein the second administration information includes a flag related to the hardware or the hardware engine that the module unit, connected to the image information apparatus, has.

13. An image information apparatus as recited in claim 10, wherein the third

administration information includes, in the hardware or the hardware engine that the image information apparatus has, a flag representing access needed from the module unit connected to the image information apparatus.

14. An image information apparatus as recited in claim 10, wherein when a connection state of the hardware or the hardware engine connected to the image-information-apparatus main unit has been changed, the first administration information that the image-information-apparatus main unit has is changed before the third administration information is structured.

15. An image information apparatus as recited in claim 10, wherein the module unit accesses the hardware or the hardware engine of the image information apparatus referring to a flag included in the third administration information, and receives processed output from the hardware or the hardware engine of the image information apparatus.

16. A module unit comprising:

- a connecting portion connected to a connection interface of an image-information-apparatus main unit that includes a first central processing unit having a plurality of hierarchical control strata, and the connection interface; and

- a second central processing unit having hierarchical control strata corresponding to the hierarchical control strata of the first central processing unit, and for transmitting, from the hierarchical control strata of the second central processing unit through the connecting portion, control information for controlling the hierarchical control strata of the first central processing unit, so as to control the first central processing unit; wherein by controlling the first central processing unit, processed information including image information is outputted from the image-information-apparatus main unit.

17. A module unit as recited in claim 16, further comprising:

an operating system for controlling the second central processing unit; and
a hardware engine running on the operating system.

18. A module unit as recited in claim 17, further comprising a memory, wherein administration information, related to the hardware engine that the module unit has, is stored in the memory.

19. A module unit as recited in claim 16, wherein:

first administration information, related to hardware or a hardware engine that the image information apparatus, connected to the module unit, has, is read out from a memory provided in the image information apparatus; and

third administration information is structured based on the first administration information read out, and second administration information, stored in a memory provided in the module unit, related to hardware or a hardware engine that the module unit has.

20. A module unit as recited in claim 19, wherein the first administration information includes a flag related to the hardware or the hardware engine that the image information apparatus connected to the module unit has.

21. A module unit as recited in claim 19, wherein the second administration information includes a flag related to the hardware or the hardware engine that the module unit has.

22. A module unit as recited in claim 19, wherein the third administration information includes, in the hardware or the hardware engine that the image information apparatus connected to the module unit has, a flag representing access needed from the module unit.

23. A module unit as recited in claim 19, wherein the module unit accesses the

hardware or the hardware engine of the image information apparatus referring to a flag included in the third administration information, and receives processed output from the hardware or the hardware engine of the image information apparatus.